

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listing, of claims in the application.

Listing of the Claims:

1. (Currently amended) A medical sensor comprising one or more flexible light emitting diodes formed by deposition of successive layers upon respective regions of a flexible substrate and one or more flexible photo-detectors formed upon respective regions of the flexible substrate.
2. (Previously presented) A medical sensor according to claim 1 in which the flexible light emitting diodes are formed upon a single flexible substrate.
3. (Previously presented) A medical sensor according to claim 1 arranged to be sufficiently flexible to permit the light source, in operation, to conform to a portion of the body of a patient to which light from the light source is to be applied.
4. (Previously presented) A medical sensor according to claim 1 in which the flexible light emitting source comprises an organic light emitting diode.
5. (Previously presented) A medical sensor according to claim 1 in which the flexible light emitting diode emits light at a wavelength suitable for diagnosis or therapy of a medical condition of the human or animal body.
6. (Previously presented) A medical sensor according to claim 1 in which the flexible light emitting diode emits light in the red to infra-red region of the spectrum.
7. (Previously presented) A medical sensor according to claim 1 in which the flexible light emitting diode emits light in the near infra-red region of the spectrum.

8. (Previously presented) A medical sensor according to claim 1 in which the flexible light emitting diode emits light in a non-visible region of the spectrum.
9. (Previously presented) A medical sensor according to claim 1 comprising a plurality of flexible light emitting diodes arranged to emit light at mutually distinct wavelengths.
10. (Previously presented) A medical sensor according to claim 1 comprising at least two light emitting diodes arranged to emit at mutually distinct wavelengths, the light emitting diodes being arranged such that light at those distinct wavelengths is emitted substantially evenly across the sum of the areas defined by the light emitting diodes emitting at those wavelengths.
11. (Cancelled)
12. (Previously presented) A medical sensor according to claim 1 comprising a strap comprising attachment means for attachment of the medical light source around or to a patient's body.
13. (Previously presented) A medical sensor according to claim 12 in which the flexible substrate forms the strap.
14. (Previously presented) A medical sensor according to claim 12 in which the attachment means is one of hook-and-loop means, barb-and-slot means, and self-adhesive means.
15. (Previously presented) A medical sensor according to claim 1 in which the light emitting diode comprises a triplet emitter.
16. (Previously presented) A medical sensor according to claim 1 in which the light emitting diode comprises one or more components arranged to wavelength-shift light emitted within the light source from a first wavelength to a second wavelength.

17. (Previously presented) A medical sensor according to claim 16 comprising a fluorescent emitter and in which wavelength-shifting is at least partially achieved by means of a fluorescent emitter.
18. (Previously presented) A medical sensor according to claim 16 comprising a wavelength-shifting grating and in which wavelength-shifting is at least partially achieved by means of the wavelength-shifting grating.
19. (Previously presented) A medical sensor according to claim 16 comprising a micro-cavity and in which wavelength-shifting is at least partially achieved by means of the micro-cavity.
20. (Previously presented) A medical sensor according to claim 19 in which the second wavelength is determined by tuning of the micro-cavity.
21. (Previously presented) A medical sensor according to claim 20 in which the micro cavity is tuned to emit light at a third wavelength substantially perpendicular to the plane of the light emitting diode.
22. (Cancelled)
23. (Previously presented) A medical sensor according to claim 1 in which at least one of the one or more flexible photodetectors is arranged so as, in operation, to detect light emitted by at least one of the flexible light emitting diodes.
24. (Previously presented) A medical sensor according to claim 23 comprising two or more flexible light emitting diodes arranged to emit light on a time-interleaved basis.
25. (Previously presented) Previously presented) A medical sensor according to claim 1 comprising a plurality of the medical light sources arranged, in operation, to emit light at wavelengths suitable for diagnosis of levels of at least one of oxygen, carbon monoxide, and bilirubin in a human or animal body.

26. (Previously presented) A medical sensor according to claim 1 in which the light detector is an organic photovoltaic detector.
27. (Previously presented) A method of operating a medical sensor according to claim 15 in a pulsed mode having a predetermined pulse period, such that the triplet emitter is activated for a period calculated to ensure that emissions fall to acceptable levels before a subsequent light pulse is emitted.
28. (Original) A method according to claim 27 in which the predetermined pulse period is less than or equal to 25 ms.
29. (Previously presented) A method of operating a medical sensor according to claim 1 in a pulsed mode, timing of emitted light pulses being determined responsive to an indication of the pulse timing of a patient to which the sensor is applied.
- 30-31. (Cancelled)
32. (Currently amended) An organic light emitting diode arrangement comprising successive layers of materials forming an organic light emitting diode arranged to emit light in the blue region of the spectrum and a wavelength-converting layer arranged to convert blue emissions from the organic light emitting diode to emissions in the infra-red region of the spectrum.
33. (Original) An organic light emitting diode arrangement according to claim 32 in which the wavelength-converting layer comprises a phosphor based compound.
34. (Previously presented) An organic light emitting diode arrangement according to claim 32 in which the wavelength-converting layer comprises an infra-red edge filter.
- 35-36. (Cancelled)

37. (New) The medical sensor according to claim 1 wherein the one or more photo-detectors are formed by deposition of successive layers upon respective regions of the flexible substrate.